



Short Safety Subject

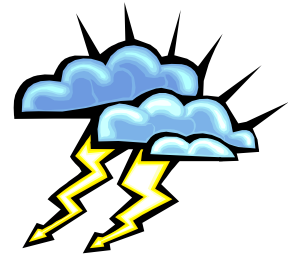
Short Safety Subjects are provided by the Public Safety Business Center, Fort Bragg, NC. Our intent is to provide safety topics for the purpose of increasing safety awareness and improving safety performance. Additional Short Safety Subjects are available on the PSBC Business Management Web Site at:

www.bragg.army.mil/psbc-bm/PubsAndForms/ShortSafetySubjects.htm

A Bolt-Out-Of-The-Blue

...treat lightning like a snake: if you see it or hear it take evasive measures...

There is no defense for lightning's "bolt-out-of-the-blue" but for the most part, lightning safety is a risk management procedure. Early recognition of the lightning hazard, with an awareness of defensive options, will provide high levels of safety.



Atmospheric Physics 101. At any one time around the planet, there are 2000 thunderstorms and 100 lightning strikes to earth per second. The frequency of lightning increases in the lower latitudes (closer to the equator), and in the higher altitudes (mountainous terrain). In the US, central Florida experiences some 10-15 lightning strikes per sq. km./yr. The Rocky Mountain west has about two thirds this activity. Central Africa, parts of Southeast Asia, and the Latin American mountain regions can experience two to three times as much lightning as central Florida.

COMMON MISCONCEPTIONS AND MYTHS.

Lightning never strikes twice... *it strikes the Empire State Building in NYC some 22-25 times per year!*

Rubber tires will insulate me from lightning... *it takes about 10,000 volts to create a one inch spark. Lightning has millions of volts and easily can jump 10-20 feet!*

We should get off the water when boating, canoeing or sailing... *tall trees and rocky outcrops along shore and on nearby land may be a more dangerous place. A cave is a safe place in a thunderstorm...if it is shallow cave, or an old mine with metallics nearby, it can be a deadly location during lightning.*

Lightning leaders from thunderclouds proceed in steps of tens of meters, electrifying ground-based objects as they approach. Ground-based objects may launch lightning streamers to meet these leaders. Streamers may be heard (some say they "sound like bacon frying") and seen (we may notice our hair standing on end). A connecting leader-streamer results in a closed circuit cloud-to-ground lightning flash. Thunder accompanying it is the acoustic shock wave from the electrical discharge. Thus, thunder and lightning are associated with one another.

Flash/Bang. We all possess a first-class lightning detection device, built into our heads as standard equipment. By referencing the time in seconds from seeing the lightning (the FLASH, or "F") to hearing the accompanying thunder (the BANG, or "B"), we can range lightning's distance. A "F" to "B" of five seconds equals lightning distance being one mile away. A "F" to "B" of ten = two miles; a "F" to "B" of twenty = four miles; a "F" to "B" of thirty = six miles; etc.

New information shows successive, sequential lightning strikes (distances from Strike 1 to Strike 2 to Strike 3) can be some 6-8 miles apart. Taking immediate defensive actions is recommended when lightning is indicated within 6-8 miles. The next strike could be close enough to be an immediate and severe threat.

Lightning is a capricious and random event. It cannot be predicted with any accuracy. It cannot be prevented. Advanced planning in the form of a risk management program is the best defense for maximum safety.

Standard lightning defenses. Substantial buildings or fully enclosed metal vehicles are the recommended shelters. Lightning in remote terrain creates dangerous conditions. Follow these guidelines:

LIGHTNING SAFETY TIPS.

AVOID: Avoid water. Avoid all metallic objects. Avoid the high ground. Avoid solitary tall trees. Avoid close contact with others - spread out 15-20 ft. apart. Avoid contact with dissimilar objects (water & land; boat & land; rock & ground; tree & ground). Avoid open spaces.

SEEK: Seek clumps of shrubs or trees of uniform height. Seek ditches, trenches or the low ground. Seek a low, crouching position with feet together with hands on ears to minimize acoustic shock from thunder.

KEEP: Keep a high level of safety awareness for thirty minutes after the last observed lightning or thunder.

Medical treatment and symptoms. Treat the apparently dead first. Immediately administer CPR to restore breathing. Eighty percent of lightning strike victims survive the shock. Lightning strike victims do not retain an electric charge and are safe to handle. Common lightning aftereffects include impaired eyesight and loss of hearing. Electrical burns should be treated as other burns